

**Abstract of the Disclosure**

Methods and systems are disclosed for automatically generating an execution order for a control system function block diagram. The input data availability is determined for the inputs of the function blocks in the diagram, and an execution order is generated for the function block diagram according to the input data availability for the function block inputs. Also disclosed are methods and systems for generating a control routine from a function block diagram having a plurality of function blocks, wherein the control routine is generated from the function block diagram according to the execution order.